1969

A study to determine the status of data processing instruction in the business education curricula of the public high schools of the southern 39 counties of Illinois

Charles L. Haycraft
Southern Illinois University Edwardsville

A STUDY TO DETERMINE THE STATUS OF DATA PROCESSING INSTRUCTION IN THE BUSINESS EDUCATION CURRICULA OF THE PUBLIC HIGH SCHOOLS OF THE SOUTHERN 39 COUNTIES OF ILLINOIS.

by

Charles L. Haycraft

B.S. in Economics, Southern Illinois University

A Thesis Submitted in Partial
Fulfillment of the Requirements for
the Master of Education Degree

Faculty of Business Education
in the Graduate School
Southern Illinois University
Edwardsville Campus
July, 1969.

SOUTHERN ILLINOIS UNIVERSITY

The Graduate School

July 16, 1969

I HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER MY SUPERVISION BY Charles L. Haycraft ENTITLED A Study to Determine the Status of Data Processing Instruction in the Business Education Curricula of the Public High Schools of the Southern 39 Counties of Illinois BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF Master of Education.

Wilmer O. Maedke
Thesis Director

Gordon C. Bliss
Faculty Chairman

ACKNOWLEDGEMENTS

I wish to acknowledge Elva Gustafson Hallstrom, the author of a Master's Thesis completed at Northern Illinois University, DeKalb, Illinois, June, 1968, entitled A Study to Determine the Status of Data Processing Courses and/or Units of Instruction In The Business Education Curricula of the Public High Schools of the Northern 21 Counties of Illinois. Mrs. Hallstrom's study served as a guide for collecting and reporting similar data for the Southern 39 Counties of Illinois.

I gratefully acknowledge and express sincere appreciation to Dr. Wilmer Maedke, Professor of Business Education, Southern Illinois University, Edwardsville Campus, who so willingly gave of his time to offer assistance and professional counsel to me in completing this Thesis.

I wish to thank Dr. Mary Margaret Brady, Chairman of the Business Education Department of Southern Illinois University, Edwardsville Campus, and Dr. Wayne Eirich, Professor of Business Education who encouraged and assisted me in the overall design of this study.

A special note of thanks must go to my wife, Karen, for her understanding, assistance and encouragement; and to my son, David, for his patience throughout the duration of this study.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Origin of the Problem

The environment for a growing and prospering economy is technological advancement. The American Economy has revealed many such advances which have changed man's role in society. The inventions of the twentieth century have within seventy years changed man's economic role from a farmer who produced primarily for his own livelihood to a skilled worker who by the use of his skill plays an important part in the lives of many people.

The technology which the economy has produced was developed for an apparent need. As society grew and changed from an agricultural economy into a hustling industrial economy, producing many goods and services, a need developed for a way to handle the clerical tasks which accompanied this change. Frank Greenwood indicated it was inevitable that the computer be invented when he stated:

> At the turn of the century Americans worked chiefly at agricultural jobs. Advancing technology changed this. Manpower was drained first from agriculture to manufacturing and then from factories to jobs handling, processing, and distributing foods and service. Concurrently, paper-handling clerical tasks multiplied until they now almost overwhelm productive activity, and the computer would have to be invented if it had not already been developed.[1]

---

[1]Frank Greenwood, "Data Processing and Systems," Journal of Business Education, (October, 1965), p. 15.

With the invention of the computer came a new method of handling and processing information. This new system, called data processing, has virtually revolutionized the entire realm of office practices and procedures. In addition to changing the method of processing information, data processing has also changed the role of the office employee. The use of this equipment has made many clerical and office occupations obsolete. On the other hand, data processing has created many new office occupations. In fact, there is substantial information available indicating that data processing has created more jobs than it has made obsolete. "Studies made by private enterprise and the U.S. Department of Labor indicate that instead of reducing the number of office employees, business data processing tends to increase the office staff."[2]

The new occupations which have been created by data processing have been accompanied by demands for trained people to fill the jobs. Initially, companies which produced data processing equipment assumed the responsibility for retraining present employees for the new vocations. However, as the demands for trained data processing personnel became more apparent, private business and technical schools entered the field. These schools served as a valuable tool for training people who found the skills they had acquired in high school no longer in demand and for people who simply wanted to enter the field of data processing.

---

[2]Commonwealth of Pennsylvania, Data Processing for Business Departments in Pennsylvania's Public Schools, Bulletin 276 Department of Public Instruction, (Harrisburg, Penn., 1964).

As the field of data processing continues to grow and create additional demands for trained people, society is beginning to accept some of the responsibility for offering this training. Public secondary schools were one of the first institutions to recognize that as business occupations change, training must also change.

> The processing of data by electronic equipment has created vast changes in business, government, and industrial methods of handling business information. As a direct consequence, the educational requirements for many business occupations have changed considerably. Although this change has been with us for about two decades, its effects have been slow to arrive on the secondary school scene. However, in the next decade these effects will demand attention in our business education classrooms and many of our students will look to the business teacher for knowledge and skill necessary for a career in data processing.[3]

Even with this realization many problems still exist which are causing many secondary schools to take a long hard look at the feasibility of offering data processing in their curriculum.

> Data processing has become so widespread in business, government, and industry that effort is being made on the highschool level to provide education and training in data processing procedures. However, establishing an instructional program in electronic data processing although ideal is not always practical for most communities. The size of the community and the high school, the degree of local need on the part of business and industry, and the school's financial resources must determine the type of program offered.[4]

---

[3]Soika, Bernard S., "Data Processing Center, Scranton," Journal of Business Education, (December, 1965), p. 111.

[4]Carlberg, Mona, "Survey of Data Processing Instruction in Six High Schools," Journal of Business Education, (March, 1966), p. 235.

Purpose

This study is designed to determine the status of data processing instruction in the business education curricula of the public high schools of the southern 39 counties of Illinois. Specifically, the purposes of this study are to determine:

1. If the schools investigated are offering a separate course in data processing.
2. If the schools investigated are offering a unit or units in data processing incorporated in another course.
3. If the schools investigated lease or own data processing equipment which is used for educational purposes.
4. If the schools investigated share data processing equipment with any other schools or institutions.
5. What data processing courses are being taught in the schools investigated.
6. What data processing units are being taught in the schools investigated.
7. On what levels data processing courses are being taught.
8. Whether data processing equipment is available for students on a full-time or part-time basis.
9. What preparation teachers have for teaching data processing courses and units.
10. What future plans are being considered for incorporating data processing courses and units in data processing into the curriculums of the schools investigated.
11. What instructional materials are being used to teach data processing courses and units.
12. The number of students receiving instruction in data processing.

Significance of the Problem

The impact of data processing on modern business is becoming more and more pronounced. As changes occur in businesses, business

occupations are also changed.

The public secondary high school has traditionally been the training ground for a great many office occupations. However, today educators are finding curricula must meet the demands of the new technology.

> The clerical field is still there--broad complex and changing. Many clerical jobs exist today which are largely data processing support jobs. Our old "clerical" student is outdated in a growing number of business offices. Retailing students must have a broad understanding of ADP systems and applications. Amazing uses are being made of ADP in the entire marketing field. A bookkeeping student today who is allowed to graduate without a good exposure to the use of ADP in record keeping and analysis systems which result, is not going to be of relative value in business until he gains this knowledge. Even specific subjects such as law, filing, business communications, clerical practice, office practice, shorthand, business training and typing contain many opportunities where significant data processing illustrations can and should be made.[5]

Ultimately, any training program is evaluated in terms of potential employment. Sister Jane M. Donald reports:

> High school placement directors are beginning to realize that students who can report some knowledge of data processing on their applications forms are receiving employment preferences.[6]

For business education to survive it must be dynamic and meet the challenge of the present.

> The impact of new techniques brought about by automation forces business to convert rapidly to data processing machines for fact accumulation and computation. Consequently, office procedures are changing and when major

---

[5]Wood, Merle W., "A Look at Data Processing Instructional Programs," The Balance Sheet, Vol. XLVII, (Sept., 1965), p. 7.

[6]Donald, Jane M. Sister, "Data Processing--Let the Twain Meet," Journal of Business Education, (February, 1967), p. 190.

> changes are made in the business office a revision of the business curriculum becomes necessary.[7]

In the past the business curriculum has met the challenges of new technology.

> Every business curriculum in the past, by design or not, met the challenge of change. In fact, the ability to meet the needs of business and society as they arose has been the genius of education for business.[8]

Even today the business education curriculum is meeting the challenge of data processing.

> By 1972 and certainly by 1977, most of our 25 thousand secondary schools will be offering their students some kind of data processing instruction, if only punched card principles and orientation.[9]

This study will investigate the status of data processing in the southern 39 counties of Illinois. From this study business educators will be able to draw their own conclusions from the data presented as to whether they are meeting the challenge of data processing.

Definitions of Terms

1. Data Processing - The recording, classifying, sorting, summarizing, calculating, transmitting, and storing of information through the use of electronic and electro-mechanical equipment, such as computers and unit record equipment.

---

[7]Commonwealth of Pennsylvania, Data Processing for Business Departments in Pennsylvania's Public Schools, Bulletin 276, Department of Public Instruction, (Harrisburg, Pennsylvania, 1964), p. 7.

[8]McKee Fisk, "A Business Curriculum to Meet Change," Business Education Meets the Challenges of Change, Fourth Yearbook of the National Business Education Association (Washington, D.C.: National Business Education Association, 1966), p. 201.

[9]Grant, C B S, "Data Processing Instruction Predicted for Most High Schools within 5 Years," The Data Processor, (September, 1967), p. 36.

2. Automation - The entire unit of investigation, and methods of making processes or machines self-acting or self-making.

3. Technological Developments - Changes which have occurred through application of scientific knowledge, methods, or research to the industrial arts and the effects of manufacture and building.

4. Card Punch - A machine used to record data by punching holes in cards. The keyboard is similar to that of a typewriter.

5. Verifier - A machine similar to the keypunch used for pinpointing the errors on a punched card.

6. Sorter - A machine that classifies or groups cards automatically in numerical or alphabetical sequence according to the data on the cards.

7. Collator - A device used to compare data from two decks of punched cards and merge, match, select, or sequence-check cards.

8. Accounting machine or tabulator - A device that reads (senses) holes in punched cards, calculates and prints information on report forms.

9. Reproducer - A device that reproduces data from one card by punching the information into another card in any sequence desired.

10. Interpreter - A machine that is designed to print data punched in the card on the card itself. Helps to detect errors.

11. Computer - A device making automation possible; the central processing unit in a data processing system. It is capable of making simple decisions and modifying instructions. It is the control center of the entire system.

12. Business Education Teacher - A teacher who is certified by the Illinois Office of Public Instruction as qualified to teach business education subjects at the high school level.

13. Business Education Curriculum - An organized sequence of courses in business education which leads to competence in business and qualifies the student for high school graduation.

14. Data Processing Unit of Instruction - A unit of instruction in data processing which is incorporated in another business education course.

Delimitations

This study was delimited to 149 public high schools in 39

counties of Southern Illinois.

The status of data processing was considered only as applied to the business education curricula. No attempt was made to survey other areas of the curriculum where data processing might be taught.

The effectiveness of the programs surveyed and the adequacy of the equipment used were not evaluated. The questionnaire simply asked if the school had a course or unit in data processing and if the school had data processing equipment available for student use.

Teachers who supplied information regarding their background in data processing were members of the business education departments of schools surveyed. The adequacy of teacher training in the area of data processing was not measured.

Limitations

This study is limited to the researcher's ability to interpret and analyze the data gathered.

This study is further limited to the responses of the individuals who returned a completed questionnaire.

The results of this study are only applicable to the population surveyed.

Sources of Data

Background material was obtained by completing an investigation of the books, articles, theses, and dissertations that had been written since 1960 in the areas of training and data processing. The investigation included the following sources of information:

1. Business Education Digest, published annually by Delta Pi Epsilon, through the Editorial office of the Gregg

Publishing Division of the McGraw-Hill Book Company, Inc., New York.

2. Business Periodicals Index, published monthly except July by the H. W. Wilson Company, New York.

3. Dissertation Abstracts, published monthly by University Microfilms, Inc., Ann Arbor, Michigan.

4. Education Index, published monthly except July and August by the H. W. Wilson Company, New York.

5. National Business Education Quarterly, published four times a year by the National Business Education Association, Washington, D.C.

6. Readers Guide to Periodic Literature, published monthly by the H. W. Wilson Company, New York.

7. Theses files of Southern Illinois University, Edwardsville, Illinois, and Northern Illinois University, DeKalb, Illinois.

Method of Procedure

Due to the number of high schools included in the study and the type of information to be gathered, a questionnaire survey was selected as the means for gathering the information needed. Because of the number of high schools involved and size of the area surveyed, it was determined that personal interviews and visitations would not be practical.

Two questionnaires were developed for this study following the characteristics of a good questionnaire as set forth by Best.

1. It deals with a significant topic, a topic which the respondent will recognize as important enough to warrant spending his time in completing.

2. It seeks only that information which cannot be obtained from other sources such as school reports or census data.

3. It is as short as possible, only long enough to get the essential data.

4. It is attractive in appearance, neatly arranged, and clearly duplicated.

5. Directions are clear and complete; all questions are worded as simply and as clearly as possible.

6. Questions are objective with no leading suggestions as to the responses desired.

7. Questions are presented in good psychological order, proceeding from general to more specific responses.

8. It is easy to interpret and tabulate.[10]

The first questionnaire was designed to obtain data concerning the status of data processing in the high school's business curriculum. Specific questions were asked in regard to whether the school was offering courses or units in data processing, the data processing equipment owned or leased, the number of students enrolled in data processing, and the future plans of the school for offering data processing in their curriculums.

The second questionnaire was designed to elicit information regarding teacher training. The main purpose of this questionnaire was to gather data in reference to teacher education in data processing. Data were also gathered relating to teacher attendance at Southern Illinois University.

After the questionnaires were drafted, they were submitted to a business education research class at Southern Illinois University, Edwardsville, Illinois, for recommendations for revisions. This procedure was followed three times and three revisions were made upon the recommendations of the class.

---

[10]John W. Best, Research in Education, (Englewood Cliffs: Prentice-Hall, Inc., 1959), p. 151-152.

A pilot study was then undertaken to test both of the questionnaires. Both questionnaires were sent to all of the schools in Madison County which included 13 public secondary schools. These 13 schools represented approximately 9 per cent of the total population of the 146 schools surveyed. From the results of this pilot study it was determined that the questionnaire was designed to gather the information needed for this study. A slight change was made in one phrase of question #14 due to the results of the pilot study. However, because of the insignificance of this change, the data gathered from the pilot study was included in the final results of the study.

The southern 39 counties of Illinois in regions 5 and 6 as outlined in the Directory, Illinois Schools,[11] were selected for this study. Names and addresses of the public high schools in these counties were also obtained from the Directory of Illinois Schools.[12] The Directory of Business Education Teachers was used to obtain the names and addresses of the business division department head and the number of business faculty. A letter of explanation and the questionnaires were mailed to 146 high schools in the 39 counties of Southern Illinois. In each school the department head or faculty member was asked to complete the questionnaire pertaining to the status of data processing in the business curriculum.

In addition, each teacher in the Business Education Department

---

[11]Illinois Department of Textbooks and Publications, Directory Illinois Schools, Circular Series A, No. 173, (Springfield, 1968-69).

[12]Illinois Department of Textbooks and Publications, Directory Illinois Schools, Circular Series A, No. 173, (Springfield, 1968-69).

was asked to complete the second questionnaire concerning teacher training in data processing.

A time interval of two weeks was allowed for the initial response to the first mailing. All schools which had not responded to the first mailing were sent a second mailing which did not include a questionnaire.

A final follow-up mailing was sent to non-responding schools two weeks after the second mailing. This follow-up contained an additional questionnaire.

Responses were then tabulated and analyzed using the Data Processing Center at Southern Illinois University, Edwardsville, Illinois.

Preview of the Study

Chapter II contains a review of the related literature concerning data processing.

In Chapter III an analysis and interpretation of the information concerning data processing collected during this study is presented.

In Chapter IV an analysis and interpretation of data concerning teacher education collected during this study is presented.

Finally in Chapter V, the summary, recommendations, and conclusions are presented.

CHAPTER II

REVIEW OF RELATED MATERIAL

A review of literature related to data processing was made from 1960 to the present. A wealth of material pertinent to this study was found in books, magazine articles, theses and dissertations. It soon became apparent from the information reviewed that many people agree that much of the responsibility for teaching data processing lies within the high school. Adaline Jones, in a study conducted in Ohio, established that many jobs exist in data processing for people who have only a high school education.

> There is a level of employment in computer installations for which the clerical worker with only a high school education can qualify.
> This conclusion is based on the fact that 27 first level entry occupations occurred among the 69 participants in the study.
> A first level entry occupation has been defined as an occupation for which there is no work experience or education or training requirements other than high school graduation, although the education and training requirement was extended in the study to include as much as six months of education or training other than high school graduation, there were still participants who had no educational requirements beyond high school for each of the 27 occupations.[13]

Carter, in a similar study conducted in Denver, Colorado, states "findings indicate to the high school student interested in a beginning

---

[13]Adaline Dorothy Seitz Jones, "A Survey to determine the Knowledge and Skills Needed by Clerical Workers in First Level Entry Occupations in Digital Computer Installations," (Ph. D. dissertation, The Ohio State University, 1964), p. 352.

data processing position that a majority of firms have positions available to beginning workers as equipment operators and in clerical positions."[14]

In summarizing the recommendations made by the companies, he says:

> Recommendations for High Schools. Firms with regular programs emphasize the need for high school courses in data processing. Company recommendations, along with information from other sources, are useful to administrators and business teachers for the justification and establishment of data processing programs in the secondary schools.
> A majority of the firms with programs for training operator, technical, and clerical personnel emphasize beginning courses, course objectives, equipment, entrance requirements, and company aid. Majority preferences are summarized in the following statements:
>
> 1. Data-processing courses are recommended for seniors and juniors.
> 2. Business applications, machine acquaintance, occupational information, history of data processing, and economic aspects represent the objectives for school courses.
> 3. Key punches, sorters, tabulators, reproducers, and computers are recommended for data processing courses.
> 4. Entrance requirements include an interest in machines, the use of tests, and an inclination to detail and mathematics.
> 5. Aid is available to high school programs in the form of co-operative work experience programs, talks, field trips, career information, and instructors.
>
> None of the firms with recommendations for data processing courses in the high schools indicates a minority preference.[15]

---

[14]Deane Milton Carter, "A Study of Office Training for Data Processing Personnel in Selected Businesses in Metropolitan Denver, Colorado, with Implications for Business Education in the Secondary Schools," (Ph. D. dissertation, State University of Iowa, 1965), p. 273

[15]Ibid., p. 281-282.

Additional evidence of the growing demand for data processing personnel is indicated in a recent article written by Stephen F. Hallam.

> A survey of data processing employers in a city of approximately 50,000 people located in the Central Illinois cornbelt revealed an intense desire for co-operative work education programs. The demand for trained data processing personnel in their locality is great. Employers believe that this training can best be accomplished through close cooperation between schools and business.[16]

Wenner conducted a study to determine minimal employment requirements of high school graduates in the field of data processing and to develop a course outline for teaching an introductory, one-semester high school course in data processing. A survey of firms with data processing installations lead Wenner to make the following conclusion.

> The results of the survey of Iowa business firms lead the author to conclude that there are positions in the field of data processing that are open to persons who have recently graduated from high school. At the present time, the requirements are such that several of the job categories would not be available for these persons. These jobs are electronic data processing analyst and systems analyst.[17]

Wenner also makes these recommendations for high schools who are not offering data processing.

---

[16]Stephen F. Hallam, "Businessmen talk about Data Processing Education," The Balance Sheet, Vol XLIX, (September, 1967), p. 15.

[17]James F. Wenner, "An Analysis of the Minimum Data Processing Employment Requirements in Selected Iowa Businesses for the Purpose of Developing a High School Data Processing Orientation Course," (Ph. D. dissertation, University of Iowa, 1965), p. 185.

The present study, other related studies, and current research seem to indicate that the teaching of data processing at the high school level is not only feasible but most desirable. Since this is a new, rapidly developing, and expanding field in business and industry, and will materially affect the lives of most persons, the author feels the following suggestions regarding the status of data processing should be made.

1. The administrators of public secondary schools in the state of Iowa, both large and small, should review the past and current research in data processing relative to the philosophy of secondary school education. Although it is difficult to determine the number of high school students who will make use of specific skills in the area of data processing, it could be safely asserted that more will use the general background information in data processing regardless of the vocation they choose for their life's work.

   Consequently, even the small secondary schools should seriously consider the offering of data processing as part of their curriculum.

2. Secondary school administrators who feel that it is important for all high school pupils to become exposed to general business information should carefully study ways in which data processing information can become a separate course in the curriculum. However, if the administrator cannot or does not want to create a separate course for data processing, considerations should be given for the inclusion of information of this type into one of the existing courses in the curriculum. It is felt that this is necessary to provide this type of information for the student.

3. It is recommended that secondary school administrators in areas of large population concentration seriously consider the research completed and currently in progress relative to the teachings of vocational data processing. It has been shown that the demand for trained data processing personnel presently exists and all indications point to an increasing demand. It is important, therefore, that the opportunity for education and training in data processing be afforded to secondary school pupils.[18]

Nixon conducted five case studies of selected high schools in

---

[18] Ibid., p. 185-187.

New Jersey utilizing automated data processing equipment.

The study investigated the use of data processing equipment in four areas of school operation (1) the building of schedules, (2) the retrieval of pupil personnel data, (3) school business administration applications, and (4) the use of data processing equipment as an instructional tool. He made the following observations in regard to using data processing equipment for instructional purposes:

> The responsibility for teaching automated data processing skills should be delegated to the business education department in the public secondary schools. Currently, the demand for trained operators with a high school background falls within two job classifications which include the key punch machine operator and the tabulating machine operator. Thus, training in the secondary public school should be focused on utilizing electromechanical or unit record equipment as instructional tools necessary to meet the objectives of the program.
>
> The basic unit record equipment required to offer a minimal program should include: the key punch machine, the sorting machine, and the accounting machine.
>
> Secondary public schools may enhance their program and make the data processing course more comprehensive by including the following pieces of unit record equipment in the configuation: typewriter with simulated keyboard, the verifier, the reproducer, and the interpreter.
>
> The automated data processing course in a secondary public school should be offered as an elective subject. Students should have the same opportunity to elect data processing in much the same manner as they would elect shorthand, typing, accounting, or the social business subjects. Class size must be limited to approximately ten students unless the school provides enough machines to accommodate larger classes.
>
> Generally, the high school student should take one year of typewriting as a prerequisite for key punch training. The desired objective of the typewriting course is to teach the skills necessary for the trainee to operate the key punch machine with a high degree of accuracy. The student should like to perform routine work that requires attending to minute details associated with the key punch function.

> If the secondary school has been able to install all the unit record equipment listed in this section of the report, the student should receive training on the card punch, the verifier, the sorter, the reproducer, and the tabulator. Business students may discover that the tabulator is the most difficult machine to comprehend, especially if it is the type which requires operation.
>
> The following topics should be included in a secondary school automated data processing course utilizing electromechanical card punch equipment.
>
> 1. A definition of data processing and the objectives of automated data processing systems.
> 2. The evolution of unit record equipment and electronic computer systems from the manual method to the stored program.
> 3. The introduction of concepts and operational principles of automated data processing.
> 4. The introduction to problem organization, fundamentals of input and output operations, and elementary programming techniques.
> 5. The development of practical and useful skills on the various pieces of unit record equipment.[19]

A comprehensive data processing program is taught at Poway high school in California. Janet Baulch who is responsible for initiating this program reports:

> Data processing, as taught at Poway High School, covers the operation of the key punch, sorter, collator, reproducer, interpreter, and accounting machine or tabulator. In addition a general knowledge of computers and an introductory taste of Fortran Programming is given the students. For students who wish to pursue computer programming further, the high school also offers it as a follow up course, or concurrently in the case of seniors.[20]

---

[19]Joseph Elton Nixon, "The Utilization of Electro-Mechanical and Electronic Data Processing Equipment in Selected Public Secondary Schools," (Ed. D. dissertation, Temple University, 1967), p. 185-188.

[20]Janet L. Baulch, "Data Processing in one Comprehensive High School," Journal of Business Education, (April, 1968), p. 283.

LaSalle conducted a study to determine the role of the business education programs in secondary schools in preparing students for employment in business offices utilizing automated data processing equipment. A questionnaire was distributed to 95 business education departments in the secondary schools and to 43 selected educators on both the secondary and higher education levels. A questionnaire was also distributed to 118 representative business offices and to 27 producers of automated data processing equipment. La Salle's findings were:

1) Ninety-six percent of the respondents were of the opinion that preparation for employment in business offices utilizing automated data processing equipment should be included as one of the objectives of the business education programs in the secondary schools.

2) Ninety-five percent of the producers and 85 percent of the users recommend that business education departments should offer a course devoted to a study of automation. Nineteen percent of the participating secondary schools were found to currently offer a course on automation.

3) A majority of the respondents favored a required one year course on automation, offered in the senior year, for all business education majors. The subject matter for such a course should emphasize the types of automated equipment available, the employment opportunities in the field of automation, an orientation to data processing, and the operation of automated equipment, according to the recommendations of the respondents.

4) A majority of the respondents indicated that a unit in one of the existing business education courses should be devoted specifically to a study of automation if a separate one is not offered. The basic content areas recommended for such a unit are the types of automated equipment available, the employment opportunities in the field of automation, and an orientation to data processing.

5) Fifty-seven percent of the respondents found current textbooks and other supplementary materials dealing

with automation to be inadequate for general use in secondary school instruction. Eight different textbooks were reported as being currently used by secondary schools in the study of the areas of automation.

6) Seventy-five percent of the business educators and 87 percent of the secondary school respondents recommended offering instruction on key punch equipment. Seventy-one percent of the secondary school respondents favored including instruction in the business education programs on collators and 75 percent favored including instruction on accounting machines.

7) Eighty-one percent of the respondents recommended that business education departments which do not possess any automated data processing equipment should cooperate with local business offices in which students could obtain instruction on such equipment.[21]

MacDonald undertook a study to prepare teaching material for use in secondary school classes where data processing is being taught. The materials developed were designed for use as a unit of instruction in existing business classes where a minimal amount of data processing equipment was available. MacDonald felt that many schools would be unable to buy expensive data processing equipment.

> The teaching of data processing at a vocational competence level is and probably will be limited by the availability of equipment. Equipment is expensive and not available in many schools.[22]

Still he concludes that data processing should be offered to

---

[21]James Frank LaSalle, "The Role of the Secondary School in Preparing Students for Employment in Business Offices Using Data Processing Equipment," (Ed. D. dissertation, The Pennsylvania State University, 1963), p. 128-129.

[22]Robert David MacDonald, "The Development of A Unit of Study In the Principles of Data Processing for use in the Business Education Curriculum of Secondary Schools," (Ed. D. dissertation, Northern Illinois University, 1964), p. 199.

high school students. His conclusion concerning training of secondary school students were as follows:

1) High school students who enter the labor market without training in data processing will be at a distinct disadvantage. Most jobs will, in some way, involve direct or indirect contact with data processing operations.

2) There is no single valid criterion for the identification of people who could profitably receive training in data processing. Many tests have been used to select trainees but none has proved entirely satisfactory.

3) At present very little is being done to provide the training in data processing that high school graduates will need. Few schools provide any training in the field.

4) This failure to offer the necessary training to high school students can be divided into four categories: confusion as to the training to be offered, shortage of qualified teachers, lack of data processing equipment for instructional purposes in most schools, and lack of suitable teaching materials.[23]

Carolyn Godby made a survey of the data processing occupations and the high school curriculums of the Pekin-Peoria area. Twenty-one business firms in the area participated in the study. The findings of the study indicated the following to be true of the business employers.

> The business employers are in general agreement that there is a need for training automated data processing workers prior to the placement on the actual job. This is contrary to the common belief that the employee should be trained on the job. Employers think that the following agencies, in the order in which they are listed, should provide the training of data processing workers: high schools, equipment companies, business colleges, employers, colleges or universities, and adult education programs operated by the local public school system.[24]

---

[23] Ibid., p. 197.

[24] Carolyn Godby, "Clerical Employees in Data Processing Occupations," The Balance Sheet, Vol. XLVI, (October, 1964), p. 60.

Godby believes that the data processing should be included in a clerical office practice course. In her point of view a unit of data processing incorporated in the clerical office practice course offers a solid base for all clerical students who may become involved in data processing

> A unit of work giving background information about data processing should be included in the clerical office practice course. The complete clerical lane of the business curriculum should continue to be provided. Most of the students who are training to become clerical workers in data processing should be encouraged to take this complete sequence. The clerical office practice course is a desirable 'capstone course' because it includes units of work which pertain to duties performed by clerical workers in business data processing.[25]

Jerre Gratz conducted a study to identify and analyze the major issues in selected business education subjects of the public secondary schools. His survey included 250 high school teachers and 48 leaders in the field of business education. One of the questions asked was: where will automation have its greatest effect in the business education curriculum? Sixty to sixty-nine percent of the leading business educators responded as follows:

> Automation will have its greatest effect on the teaching of bookkeeping by increasing the importance of teaching the fundamental skills, principles, and understandings in bookkeeping.
>
> Automation will have its greatest effect on the teaching of general business by making the content of these courses more difficult and challenging by discussing the problems caused by automation, such as the impact on the economy, technological unemployment, and product development.

---

[25] Ibid., p. 93.

[26] Jerre Eugene Gratz, "Identification and Analysis of the Major Issues in Selected Business Education Subjects of the Public Secondary Schools," (Ed. D. dissertation, University of Houston, 1961), p. 275.

Summary

From the literature reviewed in this chapter, the business educators quoted are in agreement that data processing should be offered in the high school. However, there are some disagreements as to whether it should be offered as a course or as a unit incorporated in another business course. Furthermore, if data processing is to be offered as a unit incorporated in another business course, leading business educators are not in agreement as to what course would be the most appropriate. Although there are certain variations of the implementations of data processing into the business education curriculum, the implications for secondary teachers are clear. Data processing is a must for the business education curriculum.

CHAPTER III

ANALYSIS AND PRESENTATION OF DATA CONCERNING DATA PROCESSING

General Background Information of the Schools Surveyed

Size of Schools

Nearly two-thirds (64 per cent) of the 125 schools included in this study had pupil enrollments of less than 499. This group included 80 schools. The next largest category was schools with an enrollment of 500 to 999 students. There were 31 schools in this group, accounting for 24.8 per cent of the 125 schools surveyed. If category one (schools with enrollments of 0-499) and category two (schools with enrollments of 500 to 999) are taken as a summation, 111 schools (88.8 per cent) of the entire population of 125 schools show enrollments of less than 1000 students. High schools with student populations of 1000 to 1499 students numbered six (4.8 per cent). Three high schools (2.4 per cent) reported enrollments of 1500 to 1999. There were also three (2.4 per cent) high schools with student enrollments of 2000 to 2499. The smallest single category of high schools had student populations of over 2500. This group totaled two (1.6 per cent) high schools of the 125 responding.

Metropolitan Areas

The metropolitan areas served by the high schools in this study are illustrated in Table 1 (Page 25). The first category of metropolitan areas (under 4999 population) represented the largest single

TABLE 1

ENROLLMENT OF THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS
AND THE POPULATION OF THE METROPOLITAN AREAS SERVED

Metropolitan Area Size	School Enrollments						Totals	Per Cent
	Under 499	500-999	1000-1499	1500-1999	2000-2499	Over 2500		
Under 4999	77	8	1	0	0	0	86	68.8
5000-9999	3	20	0	0	0	0	23	18.4
10,000-14,999	0	3	1	1	0	0	5	4.0
15,000-19,999	0	0	2	1	1	0	4	3.2
20,000-24,999	0	0	2	0	0	0	2	1.6
25,000-29,999	0	0	0	0	0	0	0	0
30,000-34,999	0	0	0	0	0	0	0	0
Over 35,000	0	0	0	0	2	3	5	4.0
Totals	80	31	6	2	3	3	125	100.0

category of the survey. There were 86 metropolitan areas in this category. These areas included 68.8 per cent of the schools included in this study. The second largest category of metropolitan areas was the 5000 to 9999 grouping which included 23 (18 per cent) of the schools. These two categories (under 4999 and 5000 to 9999) accounted for 109 (87.2 per cent) of the 125 metropolitan areas surveyed in this study. The remaining 16 (12.8 per cent) metropolitan areas fell into the other six categories which represented areas over 10,000 population.

Numbers of Business Teachers

Each school surveyed was asked to report the number of business teachers in their business education department. The 125 schools included in this study indicated collectively that they were employing 376 business education teachers. The results of this question are exhibited in Table 2 (Page 27).

Seventy-one (56.8 per cent) of the schools had one or two teachers on their business education staff. An additional 36 (28.8 per cent) schools had staffs of from three to four teachers. A summation of these two categories (one-two and three-four teachers) represents 107 (85.6 per cent) schools of the 125 surveyed. There were 18 (14.4 per cent) schools that reported staffs of from five to sixteen teachers.

Data Processing Equipment Available for Instructional Purposes

The questionnaire used for this study attempted to ascertain how much data processing equipment was available for either part-time or full-time student use in the 125 schools surveyed. Sixty-three

TABLE 2

NUMBER OF BUSINESS EDUCATION TEACHERS IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Number of Teachers	School Enrollments Under 500	500-999	1000-1499	1500-1999	2000-2499	Over 2500	Totals	Per Cent
1-2	70	1	0	0	0	0	71	56.8
3-4	10	25	1	0	0	0	36	28.8
5-6	0	4	1	1	0	0	6	4.8
7-8	0	1	3	0	0	0	4	2.4
9-10	0	0	1	1	2	0	4	3.2
11-12	0	0	0	0	0	1	1	.8
13-14	0	0	0	0	1	0	1	.8
15-16	0	0	0	0	0	2	2	1.6
Totals	80	31	6	2	3	3	125	100.0

(50.4 per cent) of the schools indicated that they did have some type of data processing equipment available.

Table 3 (Page 29) illustrates the data gathered regarding data processing equipment. Calculators were the largest category of equipment available in the schools covered in this study. Calculators are used in 32 (25.6 per cent) of the high schools. The second largest category of equipment was IBM Simulators. This equipment was available in 27 (21.6 per cent) of the schools. Key punch machines were available in four (3.2 per cent) schools. Three (2.4 per cent) of the schools had both a sorter and a tabulator (accounting machine).

Interpreters were in use in two (1.6 per cent) of schools surveyed. One (.8 per cent) school reported a collator, verifier, and reproducer for instructional purposes.

The data gathered regarding part-time or full-time use of data processing equipment revealed that only two categories of equipment were being used on a part-time basis. Ten of the 32 schools which indicated that they had calculators reported that the equipment was available only part-time. IBM Simulators were shared in six of the 27 schools where they were used. Table 4 (Page 30) depicts the information concerning part-time and full-time student use of data processing equipment.

With Whom Data Processing Equipment is Shared

Data processing equipment was being shared with the Office Machines class in ten out of the 16 schools which reported sharing equipment. Three schools indicated they were sharing data processing

TABLE 3

DATA PROCESSING EQUIPMENT AVAILABLE FOR USE IN DATA PROCESSING EDUCATION IN THE BUSINESS EDUCATION DEPARTMENTS OF THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS
(*Based on 125 Responses)

Equipment	Machines Available	Schools in Which Available	Per Cent of Schools
Calculator	74	32	25.6
IBM Simulator	69	27	21.6
Key Punch	9	4	3.2
Sorter	3	3	2.4
Tabulator Acct. Mach.	3	3	2.4
Interpreter	2	2	1.6
Collator	1	1	.8
Verifier	1	1	.8
Reproducer	1	1	.8
Posting Machine	1	1	.8
No Equipment		93	74.4
Totals	164	*	100.0

TABLE 4

DATA PROCESSING EQUIPMENT AVAILABLE FOR FULL-TIME OR PART-TIME USE IN DATA PROCESSING COURSES IN THE BUSINESS EDUCATION DEPARTMENTS OF THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Equipment	Schools in Which Available for Full-time Student Use	Schools in Which Available for Part-time Student Use	Total Schools In Which Available
Calculator	22	10	32
IBM Simulator	21	6	27
Key Punch	4	0	4
Sorter	3	0	3
Tabulator (Acct. Mach.)	3	0	3
Interpreter	2	0	2
Collator	1	0	1
Verifier	1	0	1
Reproducer	1	0	1
Posting Machine	1	0	1

TABLE 5

WITH WHOM DATA PROCESSING CLASSES SHARED EQUIPMENT
IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

With whom Shared	Number of Schools	Per Cent
Office Machines Class	10	16.0
School Administration	3	4.8
Typewriting Class	2	3.2
Bookkeeping Class	1	1.6
Not Shared	47	74.4
Totals	63	100.0

equipment with their school administration. The majority of the schools did not share their equipment with anyone. Table 5 (Page 31) shows with whom data processing classes in the schools surveyed shared their equipment.

Summary

Of the 125 schools which responded to this study, nearly two-thirds had student enrollments of less than 500 and were located in metropolitan areas of less than 4999 population. These schools reported a total of 376 teachers on their teaching staffs. Over one-half of the schools had teaching staffs of one to two teachers.

Some kind of data processing equipment was available in slightly over half (50.4 per cent) of the schools surveyed. Calculators and IBM Simulators made up the bulk of the data processing equipment which was being used for instructional purposes. There were not sufficient numbers of other types of data processing equipment to be of any significance.

Data Processing Courses Offered in the Schools Surveyed

Only 4 (3.2 per cent) of the high schools included in this study offered courses in data processing. Three of the four schools which reported courses in data processing indicated that these courses would not commence until the Fall of 1969. The one school with the existing course in data processing was offering a two-semester course. Table 6 (Page 33) shows the number of schools offering data processing and the names of the courses. Three of the four schools called their course Introduction to Data Processing. The remaining school called

TABLE 6

DATA PROCESSING COURSES BEING OFFERED IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Name of Course	Length in Semesters		Total Number of Schools	Per Cent
	One	Two		
Introduction to Data Processing	1	2*	3	2.4
Data Processing	1*		1	.8
Not Offered			121	96.8
Totals	3	1	125	100.0

*Courses will be available in the Fall of 1969.

its course simply Data Processing.

Size of Schools Offering Data Processing Course

Two of the schools offering data processing had from 500 to 999 students and were located in metropolitan areas of 5000 to 9999 population. There was one school with 1000 to 1499 students located in a metropolitan area of 15,000 to 19,999 population. The remaining school had over 2500 students and was situated in a metropolitan area of over 35,000 population.

Basic Material Used in Data Processing Courses

The basic materials used in the data processing courses offered in Southern Illinois are illustrated in Table 7 (Page 35). Most of the materials being used were 3M materials or IBM Manuals. One school was using teacher prepared materials. A textbook was also being used by one school.

Number of Students Enrolled in Data Processing per Semester

Since only one of the four schools which indicated a course in data processing had offered the course previously, the data in regard to student enrollment for three schools starting a course in the Fall of 1969 was considered speculative. The one school which was offering a two-semester course in data processing was handling 10 students per semester. Two of the schools which were starting courses in the Fall of 1969 gave enrollments of 20 and 84 in a one-semester course. One school offering a course in the Fall of 1969 did not speculate on enrollment.

TABLE 7

BASIC MATERIALS USED IN DATA PROCESSING COURSES
IN PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Name of Materials	Number of Schools Using Materials
IBM Manuals	2
Text Book	1
3M Data Processing Unit	1
Teacher-developed Materials	1
3M Data Processing Unit & IBM Manuals	1

Grade Level in Which Course is Being Offered

All the schools surveyed offered their data processing course on the 12th grade level.

Summary

Actually only one two-semester course in data processing was being offered by one school in Southern Illinois when this survey was taken. Three other schools had plans to offer a one-semester course in data processing in the Fall of 1969. School enrollments of the schools who were offering data processing as a course or were going to be offering data processing as a course ranged from 500 to over 2500.

Three of the four schools reporting courses in data processing called the course Introduction to Data Processing. Most of the schools were either using 3M or IBM materials for instructional purposes in their data processing course.

The one school which had offered data processing as a course previous to the survey indicated a student enrollment of 10 students per semester. This course was being offered on the 12th grade level. The three schools which planned to offer data processing as a one-semester course in the fall of 1969 were also going to offer it at the twelfth grade level.

Units of Data Processing Incorporated in Other Business Courses in the Schools Surveyed

High schools included in this survey were also asked if they were incorporating units of data processing instruction in other business courses. Sixty-nine (55.2 per cent) of the 125 responding

schools indicated that they were offering units in data processing. The remaining 56 (44.8 per cent) schools replied that they were not offering units of data processing incorporated in business courses.

Thirty-one high schools (24.8 per cent) were offering one business course which included a unit in data processing. An additional 24 schools were offering two business courses which included units in data processing. Table 8 (Page 38) shows the number of high schools offering courses in which units of data processing are incorporated.

The research data indicated that 130 separate units of data processing were being offered in business education courses. Forty-four (34 per cent) of these units were being offered in Clerical Office Practice courses and forty (30 per cent) were being offered in Bookkeeping courses. Secretarial Office Practice was the next largest category of courses which included data processing with 18 (14 per cent). Ten (8 per cent) of the schools offered a unit of data processing in their Office Machines course. Table 9 (Page 39) lists the business education courses in which units of instruction in data processing were taught.

Length of Units

The length of the data processing units included in other business courses ranged from 1 to 9 weeks. Eighty-four (65 per cent) of the units of instruction were from one to two weeks in duration. The remaining 46 (35 per cent) units in data processing were from 3 to 9 weeks in length. Table 10 (Page 40) exhibits the length of the units of data processing included in business education courses.

TABLE 8

NUMBER OF BUSINESS EDUCATION COURSES IN WHICH UNITS OF INSTRUCTION IN DATA PROCESSING WERE INCLUDED IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Number of Courses in Which Units of Data Processing were Incorporated	Number of Schools	Per Cent
0	56	44.8
1	31	24.8
2	24	19.2
3	9	7.2
4	3	2.4
5	2	1.6
Totals	125	100.0

TABLE 9

BUSINESS EDUCATION COURSES IN WHICH DATA PROCESSING UNITS OF INSTRUCTION WERE INCLUDED IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Course	Number of Courses	Per Cent of Courses
Clerical Office Practice	44	34
Bookkeeping	40	30
Secretarial Office Practice	18	14
Office Machines	10	8
General Business	6	5
Typewriting	4	3
Cooperative Office Practice	4	3
Record Keeping	3	2
Accounting	1	1
Totals	130	100

TABLE 10

LENGTH OF DATA PROCESSING UNITS OF INSTRUCTION OFFERED IN BUSINESS EDUCATION COURSES IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Number of Weeks	Number of Units	Per Cent
1	39	30
2	45	35
3	12	9
4	10	8
5	3	2
6	12	9
7	0	0
8	3	2
9	6	5
Totals	130	100

Unit Description

Nearly half (49 per cent) of the units in data processing incorporated in business education courses were described as General Introduction. Twelve schools (9 per cent) described their courses as General Introduction and Key Punching. Thirty-one (24 per cent) of the schools did not give a description of their units in data processing. Table 11 (Page 42) gives the names of the units of data processing which the high schools included in business education courses.

Materials Used in Data Processing Units

Table 12 (Page 43) illustrates the Basic Materials used in data processing units of instruction in the high schools surveyed. The basic materials for 49 (38 per cent) of the 130 units of data processing instruction reported were textbooks. Teacher-prepared materials were cited as being used in 25 (19 per cent) of the units of data processing instruction. Practice sets were reported as being used in 19 (15 per cent) of the units of instruction in data processing, while company-prepared materials were listed as being used as basic materials in 17 (15 per cent) of the data processing units.

Summary

Of the 125 responding schools, 69 (55.2 per cent) reported they were offering 130 separate units of instruction in other business courses. Nearly two-thirds of the units were either being offered in Clerical Office Practice or Bookkeeping and were from one to two weeks in length.

Nearly half (49 per cent) of the units in data processing were

TABLE 11

DESCRIPTION OF DATA PROCESSING UNITS OF INSTRUCTION OFFERED IN THE BUSINESS EDUCATION DEPARTMENTS OF THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Description	Number of Units	Per Cent
General Introduction	63	49.0
General Introduction and Key Punching	12	9.0
Key Punch	7	5.0
Payroll, Accounts Receivable & Payable	7	5.0
Binary	5	4.0
Unit Records Machines	4	3.0
Unit Records and Computer	1	1.0
Not Given	31	24.0
Totals	130	100.0

TABLE 12

BASIC MATERIALS USED IN DATA PROCESSING UNITS OF INSTRUCTION IN BUSINESS EDUCATION COURSES IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Material Used	Number of Units in Which Materials Are Being Used	Per Cent
Textbook	49	38.0
Teacher-prepared materials	25	19.0
Practice set	19	15.0
Company-prepared materials	17	13.0
Programmed Materials	9	7.0
Practice Set & Textbook	7	5.0
3M Data Processing Unit	3	2.0
Recorded Tape	1	1.0
Totals	130	100.0

described as General Introduction. A majority (57 per cent) of the schools reported using either textbooks or teacher-prepared materials as the basic instructional materials.

Future Plans for Adding Data Processing Courses and/or Units of Instruction to Business Education Curricula

Data Processing Courses

Schools which did not offer a separate course in data processing were asked if they had plans to do so. One hundred twelve (89.6 per cent) of the 125 schools surveyed did not indicate future plans to offer a data processing course. Of the twelve schools which gave a positive answer to this question, three schools were going to offer the course next year. Six schools reported that they would be offering a data processing course in two years. The remaining schools indicated it would be from three to five years before their school would offer data processing as a course.

Future Plans for Units in Data Processing Incorporated in Business Education Courses

The respondents in this survey were asked if they had future plans to incorporate data processing units in business courses. Twenty-five (20 per cent) of the 125 schools surveyed indicated plans to offer a unit of instruction in data processing. Ten (40 per cent) of these units were to commence next year. An additional unit of instruction in data processing was planned by each of 12 (48 per cent) high schools within the next two to five years. These schools were uncertain when their units in data processing would begin.

A majority of the schools (84 per cent) indicated that they

would offer data processing units in either Clerical Office Practice or Bookkeeping courses. Table 13 (Page 46) shows the courses in which data processing units will be offered in the future.

Reason for not Offering Data Processing

Schools that did not offer either a course in data processing or a unit in data processing incorporated in another business education course were asked to give the reasons why. A combination of 100 different reasons were given for not offering data processing. Lack of available equipment and lack of trained teachers were given as the two main reasons for not offering data processing. Table 14 (Page 47) lists the reasons why the schools surveyed did not offer either a course or a unit in data processing.

Summary

Of the 125 schools surveyed, 12 (9.6 per cent) indicated plans to offer courses in data processing in the next one to five years. One hundred twelve (89.6 per cent) of the 125 high schools had no plans to offer a course in data processing.

Twenty-five of the 56 schools that did not have a unit of instruction in data processing stated that they had plans to offer a unit within the next five years. The majority of the units will be offered either in Clerical Office Practice or Bookkeeping.

Schools that did not have plans to offer data processing instruction gave lack of equipment and lack of trained teachers as the major contributing factors.

TABLE 13

BUSINESS EDUCATION COURSES IN WHICH DATA PROCESSING UNITS WILL BE INCLUDED IN THE NEAR FUTURE IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Course	Number of Courses	Number of Schools	Per Cent
Clerical	13	13	52
Bookkeeping	8	8	32
General Business	2	2	8
Typewriting	1	1	4
Uncertain	1	1	4
Totals	25	25	100

TABLE 14

REASONS GIVEN FOR NOT OFFERING DATA PROCESSING INSTRUCTION IN THE BUSINESS EDUCATION DEPARTMENTS OF THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Reasons	Number	Per Cent
Lack of available equipment	36	36
Lack of trained teachers	25	25
Lack of community need	16	16
Lack of interest	10	10
Lack of concern by administration	13	13
Totals	100	100

CHAPTER IV

ANALYSIS AND PRESENTATION OF DATA CONCERNING TEACHER EDUCATION

In addition to the questionnaire concerning the status of data processing in the public high schools of Southern Illinois, a questionnaire was also sent to each business education teacher. This questionnaire was designed to elicit information regarding the educational background of the business teachers.

Formal Education in Data Processing

Eighty-two (26.1 per cent) of the 313 teachers which responded to the teacher education questionnaire had some formal training in data processing. The remaining 231 (73.8 per cent) stated that they had no training in data processing.

Table 15 (Page 49) shows that 65 (20.7 per cent) of the 313 teachers indicated they had formal training in a university or college course. Sixty-two (19.8 per cent) of 313 teachers reported that they had been educated by business. Twenty-eight (8.9 per cent) cited college workshops as the means of obtaining their training in data processing.

Number of College hours accumulated in Data Processing

Teachers who had formal training in data processing were asked how many college hours they had accumulated in data processing. Fifty-five (17 per cent) of the 313 teachers surveyed had from four to six

TABLE 15

BUSINESS TEACHER EDUCATION IN DATA PROCESSING IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS
(Based on 82 Responses)

Where Educated	Number	Per Cent of Total Respondents
University or College	65	20.7
Self Educated	62	19.8
College Workshop	28	8.9
Educated by Business	17	5.4
Private Business or Technical School	5	1.5
Junior College	3	.9
Totals	180	56.8

*Respondents were allowed to check more than one answer.

quarter hours of data processing instruction in a college or university. An additional 17 (5 per cent) of the teachers had from one to three hours of data processing. Table 16 (Page 51) shows the number of college quarter hours accumulated by teachers in the high schools surveyed.

Business Teachers Who Had Taught Course or Units in Data Processing

The data gathered indicated that four (1.2 per cent) of the 313 teachers surveyed had taught a course in data processing. One hundred thirty-two (42.1 per cent) of the teachers indicated that they had taught a unit in data processing. Over half (57.8 per cent) of the teachers had not taught either a course or a unit in data processing.

Business Teachers who had Attended Southern Illinois University, Edwardsville or Southern Illinois University, Carbondale

Business teachers who had attended either the Edwardsville Campus or Carbondale Campus of Southern Illinois University were asked to give their reason for attending. One hundred nineteen (38 per cent) of the 313 teachers indicated they had attended Southern Illinois University for either a B.S. or B.A. degree. Business teachers who received their M.S. or M.A. degree at Southern Illinois University numbered 82 (26.1 per cent). A list of reasons for attending Southern Illinois University are given in Table 17 (Page 52). Many of the teachers responding to this questionnaire gave more than one reason for attending Southern Illinois University.

TABLE 16

COLLEGE HOURS ACCUMULATED IN DATA PROCESSING BY BUSINESS TEACHERS IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS

Quarter Hours	Number of Teachers	Per Cent
1-3	17	5
4-6	55	17
7-12	8	3
13-15	2	1
None	231	74
Totals	313	100

TABLE 17

BUSINESS EDUCATION TEACHERS IN THE PUBLIC HIGH SCHOOLS OF SOUTHERN ILLINOIS WHO ATTENDED SOUTHERN ILLINOIS UNIVERSITY

Reason for Attending	Number	Per Cent of Total Respondents
B.S. or B.A.	119	38.0
M.S. or M.A.	82	26.1
Summer Workshops	73	23.3
Post Graduate Courses	72	23.0
Courses in Data Processing	30	9.5
Courses which included Data Processing	16	5.1
Ph. D.	1	.3
Totals	393	125.3

*Per Cent is more than one hundred. Respondents were allowed to check more than one answer.

Summary

Of the 313 Business teachers surveyed, 82 (26.1 per cent) reported that they had formal training in Data Processing. The majority of the teachers who had formal education in data processing had acquired from four to six quarter hours at either a university or college.

One hundred eighty-one (57.8 per cent) of the 313 business teachers surveyed had taught neither a course or unit in Data Processing.

Business teachers who had attended Southern Illinois University, for a B.S. or B.A. degree numbered 119 (38 per cent of the total). Eighty-two (26.1 per cent) of the teachers stated that they had received their M.A. or M.S. at Southern Illinois University.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study was designed to determine the status of data processing instruction in the business education curricula of the public high schools of the southern 39 counties of Illinois.

Due to the number of high schools included in the study and the type of information to be gathered, a questionnaire survey was selected as the means for gathering the information needed.

Two questionnaires were developed for this study. The first questionnaire was designed to obtain data concerning the status of data processing in the high schools' business curriculum. The second questionnaire was developed to elicit information regarding teacher education in the field of data processing.

A letter of explanation and the questionnaire were mailed to 146 high schools in the 39 counties of Southern Illinois. In addition, each teacher in the Business Education Department was asked to complete a questionnaire concerning teacher education in data processing. One hundred twenty-five (85.6 per cent) of the 146 schools surveyed responded, and 313 (83.2 per cent) of the 376 teachers replied to the questionnaire.

Summary of Findings

General Background Information

Of the 125 schools which responded to this study, nearly two-thirds had student enrollments of less than 500 and were in

metropolitan areas of less than 4999 population. These schools reported a total of 376 teachers on their teaching staffs. Over one half of the schools had teaching staffs of one or two teachers.

Some kind of data processing equipment was available in slightly over half (50.4 per cent) of the schools surveyed. Calculators and IBM Simulators made up the bulk of the data processing equipment which was being used for instructional purposes. There were not sufficient numbers of other types of data processing equipment to be of any significance.

Data Processing Units Incorporated in Other Business Courses

Over half (55.2 per cent) of the 125 responding schools reported offering 130 separate units of instruction in other business courses. Over two-thirds of the units were either being offered in Clerical Office Practice or Bookkeeping and were from one to two weeks in length.

Nearly one half (49 per cent) of the unit in data processing were described as General Introduction. A majority (57 per cent) of the schools reported using either textbooks or teacher-prepared materials as the basic instructional materials.

Data Processing Courses

Actually only one two-semester course in data processing was being offered by one school in Southern Illinois when this survey was taken. Three other schools had plans to offer a one-semester course in data processing in the Fall of 1969. Enrollments of the schools who were offering data processing as a course or were going to be

offering data processing as a course ranged from 500 to over 2500.

Three of the four schools reporting courses in data processing called the course Introduction to Data Processing. Most of the schools were either using 3M or IBM materials for instructional purposes in their data processing course.

The one school which had offered data processing as a course prior to the survey indicated a student enrollment of ten students per semester. This course was being offered on the 12th grade level. The three schools which planned to offer data processing as a one-semester course in the Fall of 1969 were also going to offer it at the 12th grade level.

Future Plans for Adding Data Processing Courses and/or Units of Instruction into Business Education Curricula

Of the 125 schools surveyed, twelve (4.6 per cent) indicated that they had plans to offer courses in data processing in the next one to five years. One hundred twelve (89.6 per cent) of the 125 high schools had no plans to offer a course in data processing.

Twenty-five of the 56 schools that did not have units of instruction in data processing stated that they had plans to offer a unit within the next five years. The majority of the units will be offered either in Clerical Office Practice or Bookkeeping.

Schools that did not have plans to offer data processing instruction gave lack of equipment and lack of trained teachers as the major contributing factors.

Summary of Findings Concerning Teacher Education and Experience in Data Processing

Of the 313 Business teachers surveyed, 82 (26.1 per cent) reported formal training in data processing. The majority of the teachers who had formal education in data processing had acquired from four to six quarter hours at either a university or college.

One hundred eighty-one (57.8 per cent) of the 313 business teachers surveyed had taught neither a course or a unit in data processing.

Business teachers who had attended Southern Illinois University, at Edwardsville or Carbondale for a B.S. or B.A. degree numbered 119 (38 per cent of the total). Eighty-two (26.1 per cent) of the teachers stated that they had received their M.S. or M.S. degree at Southern Illinois University.

Conclusions

The following conclusions were drawn as a result of the data presented in this study:

1. The public high schools in Southern Illinois are just beginning to make plans to develop courses in data processing.

2. Existing data processing courses reach only a few students in the public high schools of Southern Illinois.

3. Existing data processing courses in the public high schools of Southern Illinois are being taught on the twelfth grade level.

4. Data processing equipment which is available for instructional purposes in the public high schools of Southern Illinois is virtually non-existent.

5. Data processing units of instruction which are taught in the public high schools of Southern Illinois are

for the most part incorporated into Clerical Office Practice and Bookkeeping.

6. Most of the units in data processing incorporated in business courses were less than four weeks in duration in the public high schools of Southern Illinois.

7. Textbooks and teacher-prepared materials are the main source of materials used in data processing instruction in the public high schools of Southern Illinois.

8. A majority of the Business teachers in the public high schools of Southern Illinois who had received formal training in data processing had received it at a university or college.

9. A majority of the Business Education teachers of Southern Illinois had not taught either a unit or a course in data processing.

Recommendations

1. Business educators in the public high schools of Southern Illinois should investigate the feasibility of offering more comprehensive education in data processing.

2. Area vocational schools should be investigated by both the county and local school administrators as a possible institution for offering intensive data processing instruction.

3. High schools that do not have data processing equipment available for instructional purposes should investigate the possibility of sharing equipment with organizations such as local business, local government, and other school districts.

4. Local colleges and universities should make more courses in Data Processing available for business educators.

5. Research should be conducted to determine the number of high school graduates from the public schools of Southern Illinois who seek employment in Data Processing.

BIBLIOGRAPHY

BIBLIOGRAPHY

Public Documents

Commonwealth of Pennsylvania, Data Processing for Business Departments in Pennsylvania's Public Schools, Bulletin 276, Department of Public Instruction, (Harrisburg, Pennsylvania, 1964).

Illinois Department of Textbooks and Publications, Directory Illinois Schools, Circular Series A, No. 173, (Springfield, 1968-69).

Books

Best, John W., Research in Education, (Englewood Cliffs: Prentice-Hall, Inc., 1959).

Yearbooks

Fisk, McKee. "A Business Curriculum to Meet Change," Business Education Meets the Challenges of Change, Fourth Yearbook of the National Business Education Association (Washington, D.C.: National Business Education Association, 1966).

Articles and Periodicals

Baulch, Janet L. "Data Processing in one Comprehensive High School," Journal of Business Education, (April, 1968), p. 238.

Carlberg, Mona, "Survey of Data Processing Instruction in Six High Schools," Journal of Business Education, (March, 1966), p. 235.

Donald, Jane M. Sister, "Data Processing - Let the Twain Meet," Journal of Business Education, (February, 1967), p. 190.

Godby, Carolyn, "Clerical Employees in Data Processing Occupations," The Balance Sheet, Vol. XLVI, (October, 1964), p. 60.

Grant, C B S, "Data Processing Instruction Predicted for Most High Schools within 5 Years," The Data Processor, (September, 1967), p. 36.

Greenwood, Frank, "Data Processing and Systems," Journal of Business Education, (October, 1965), p. 15.

Soika, Bernard S., "Data Processing Center, Scranton," Journal of Business Education, (December, 1965), p. 111.

Wood, Merle W., "A Look at Data Processing Instructional Programs," The Balance Sheet, Vol. XLVII, (September, 1965), p. 7.

Unpublished Material

Carter, Deane Milton. "A Study of Office Training for Data Processing Personnel in Selected Businesses in Metropolitan Denver, Colorado, with Implications for Business Education in the Secondary Schools," Ph. D. dissertation, State University of Iowa, 1965.

Gratz, Jerre Eugene. "Identification and Analysis of the Major Issues in Selected Business Education Subjects of the Public Secondary Schools," Ed. D. dissertation, University of Houston, 1961.

Hallstrom, Elva Gustafson. "A Study to Determine the Status of Data Processing Courses and/or Units of Instruction in the Business Education Curricula of Public High Schools of the Northern 21 Counties of Illinois," thesis for M.S. in Education, Northern Illinois University, 1968.

Jones, Adaline Dorothy Seitz. "A Survey to determine the Knowledges and Skills Needed by Clerical Workers in First Level Entry Occupations in Digital Computer Installations," Ph. D. dissertation, The Ohio State University, 1964.

LaSalle, James Frank. "The Role of the Secondary School in Preparing Students for Employment in Business Offices Using Data Processing Equipment," Ed. D. dissertation, The Pennsylvania State University, 1963.

MacDonald, Robert David. "The Development of A Unit of Study In the Principles of Data Processing for use in the Business Education Curriculum of Secondary Schools," Ed. D. dissertation, Northern Illinois University, 1964.

Nixon, Joseph Elton. "The Utilization of Electro-Mechanical and Electronic Data Processing Equipment in Selected Public Secondary Schools," Ed. D. dissertation, Temple University, 1967.

Wenner, James F. "An Analysis of the Minimum Data Processing Employment Requirements in Selected Iowa Businesses for the Purpose of Developing a High School Data Processing Orientation Course," Ph. D. dissertation, University of Iowa, 1965.

APPENDICES

APPENDIX A

Cover Letter

420 East Vandalia
Edwardsville, Illinois 62025
April 12,1969

Dear Department Chairman:

To complete my master's degree at Southern Illinois University, I am undertaking a study to determine the status of data processing in selected high schools in Southern Illinois. My study concerns the data processing courses being offered in the Southern Illinois high schools, the data processing units being offered in business courses, the data processing equipment available for student use, and the training business education teachers have in data processing.

I hope you will want to be a part of this study. The enclosed five-page questionnaire on the status of data processing in your school should be completed by you, the Chairman of the Business Department. You and each of the teachers in your department should complete the Questionnaire on Teacher Training for Each Teacher In the Business Education Department (yellow paper). A separate sheet is provided for each teacher.

When you and your teachers have completed the questionnaire, please return them in the enclosed, self-addressed and stamped envelope. By promptly replying, you will help advance business education in southern Illinois.

If you are interested in the results of this study, I shall be glad to forward them to you. Thankyou for your cooperation.

Best Regards,

Charles Haycraft

Enclosures

APPENDIX B

First Follow-up Letter

420 East Vandalia Street
Edwardsville, Illinois 62025
April 29,1969

Dear Department Chairman:

Two weeks ago a questionnaire concerning the status of data processing in Southern Illinois was sent to the 154 public high schools in the 39 counties of Southern Illinois.

To date, the response to this questionnaire has been overwhelming. Over 50 % of the department chairmen responded within the first three days. When you consider how busy teachers are, this kind of response is very gratifying.

To make this study representative of the schools surveyed, it is important that your school be included in the survey. Therefore I am appealing to you to complete the questionnaire and return it in the stamped, self-addressed envelope.

Thankyou for your kind cooperation and assistance.

Best Regards,

Charles Haycraft

APPENDIX C

Second Follow-up Letter

420 East Vandalia Street
Edwardsville, Illinois 62025
May 12,1969

Dear Department Chairman:

Four weeks ago a questionnaire concerning the status of data processing in Southern Illinois was sent to the 154 public high schools in the 39 counties of Southern Illinois.

At this point nearly 80% of the department chairmen of the schools surveyed have responded. To date, I have not received a reply from your school.

From the overwhelming response thus far, it can be seen that this study is important and of interest to business educators. With this in mind, I am making a final appeal to you and your teachers to please complete the enclosed questionnaire and return it to me in the stamped, self-addressed envelope.

Thankyou for your cooperation and assistance.

Best Regards,

Charles Haycraft

Enclosures

APPENDIX D

Questionnaire Sent to Department Chairmen

DATA PROCESSING SURVEY OF COURSES OR UNITS TAUGHT IN SECONDARY SCHOOLS

SCHOOL_____ NO. OF BUSINESS TEACHERS_____

ADDRESS_____
Street City County

Following are twenty-three questions concerning data processing in your school.

1. If your school has a separate course in data processing complete Sections A,B and D.
2. If your school has both courses and units in data processing complete Sections A,B,C and D.
3. If your school has only units in data processing incorporated in other courses complete Sections A,C and D.
4. If your school does not offer any data processing complete Sections A and D.

SECTION A - GENERAL INFORMATION

1. Does your school have an enrollment of

Under 499	____ 1
500 to 999	____ 2
1000 to 1499	____ 3
1500 to 1999	____ 4
2000 to 2499	____ 5
Over 2500	____ 6

2. What is the approximate population of the community in which your school is located?

Under 4999	____ 1
5000 to 9999	____ 2
10000 to 14999	____ 3
15000 to 19999	____ 4
20000 to 24999	____ 5
25000 to 29999	____ 6
30000 to 34999	____ 7
Over 35000	____ 8

3. Does your school have any of the following data processing equipment available for instructional purposes?

	No. of Machines Available for Student Use	Full-time Student Use	Part-time Student Use	
Key Punch	____	____	____	1
Reproducer	____	____	____	2
Computer	____	____	____	3
Calculator	____	____	____	4
Collator	____	____	____	5
Verifier	____	____	____	6
Interpreter	____	____	____	7
Sorter	____	____	____	8
Tabulator (Acct.Mach.)	____	____	____	9
IBM Simulator	____	____	____	10
Other (Specify)_____				11

4. If your department shares the use of the data processing equipment please indicate with whom. (Check more than one if necessary.)

School Administration	____ 1
Community College	____ 2
Office Machines Class	____ 3
Mathematics Department	____ 4
Typewriting Class	____ 5
Other Schools in district	____ 6
Other schools not in district	____ 7
Not Shared	____ 8
Other(Specify) _____	9

5. If your school has any of the above data processing equipment, please indicate if you lease or own this equipment.

Lease	____ 1
Own	____ 2

SECTION B - COURSES IN DATA PROCESSING

Please complete this section only if your school has a separate course in data processing.

6. Does your school offer a separate course in data processing?

YES	____ 1
NO	____ 2

7. If your school offers a separate course in data processing, what is the title of this course and its length in semesters? (Check more than one if necessary.)

		Length in Semesters
Data Processing	____ 1	____ 1
Introduction to Data Processing	____ 2	____ 2
Basic Data Processing	____ 3	____ 3
DAPRO	____ 4	____ 4
Basic Computer Programming	____ 5	____ 5
Business Data Processing	____ 6	____ 6
Computer Programming and Systems	____ 7	____ 7
Electronic Computer Concepts	____ 8	____ 8
Unit Record Equipment	____ 9	____ 9
Other(Specify)_____	10	____ 10

8. How would you describe your course or courses in data processing? (Check more than one if necessary.)

General Introduction	____ 1
Unit Record Equipment and Introduction to Programming	____ 2
Programming and Systems	____ 3
General Introduction and Boardwiring	____ 4
General Introduction and Programming	____ 5
General Introduction and Unit Record Equipment	____ 6
Unit Record Equipment	____ 7
Other (Specify)_____	8

9. What basic materials do you use in your data processing courses? (Check more than one if necessary.)

Textbook	____ 1
3 M Data Processing Unit	____ 2
Teacher-developed material	____ 3
3 M Data Processing Unit and IBM Manuals	____ 4
Textbook and company-prepared manuals	____ 5
IBM Manuals	____ 6
3 M Data Processing Unit and Textbook	____ 7
Other (Specify)_____	____ 8

10. What is the average number of students who take the first course in data processing per semester?

____ 1

11. What is the average number of students who take the second course in data processing per semester?

____ 1

12. At what grade level do most students enroll in the first course in data processing?

9th	____ 1
10th	____ 2
11th	____ 3
12th	____ 4

SECTION C - UNITS IN DATA PROCESSING INCORPORATED IN OTHER COURSES

Please complete this section <u>even though you may have separate data processing courses</u> in addition to having data processing units incorporated in other business courses.

13. Does your school offer a unit or units in data processing incorporated in other business courses?

YES	____ 1
NO	____ 2

14. If your school offers a unit or units in data processing incorporated in other courses, please specify the name of the course and the length of the unit in weeks. (Check more than one if necessary.)

		Length in Weeks
Clerical Office Practice	____ 1	____ 1
Bookkeeping	____ 2	____ 2
Office Machines	____ 3	____ 3
Secretarial Office Practice	____ 4	____ 4
Cooperative Office Practice	____ 5	____ 5
Accounting	____ 6	____ 6
Record Keeping	____ 7	____ 7
General Business	____ 8	____ 8
Shorthand Transcription	____ 9	____ 9
Typewriting	____ 10	____ 10
Business Arithmetic	____ 11	____ 11
Business Principles	____ 12	____ 12
Cooperative Distributive Education	____ 13	____ 13
Other (Specify)_____	____ 14	____ 14

15. How would you describe your unit or units in data processing? (Check more than one if necessary.)

General Introduction	____	1
Key Punch	____	2
General Introduction and Key Punch	____	3
Unit Record Machines	____	4
Unit Records and Computer	____	5
Payroll,Accounts Receivable & Payable	____	6
Binary	____	7
Other (Specify)_____		8

16. What basic materials do you use in your data processing unit? (Check more than one if necessary.)

Textbook	____	1
Practice Set	____	2
Teacher-prepared Materials	____	3
Company-prepared materials	____	4
Practice Set and Textbook	____	5
3 M Data Processing Unit	____	6
Programmed Material	____	7
Recorded Tape	____	8
Other (Specify)_____		9

SECTION D - FUTURE PLANS

17. If your school does not have a separate course in data processing, are you considering one?

YES	____	1
NO	____	2

18. If your school plans to offer a separate course in data processing, when?

Next year	____	1
Two years	____	2
3-5 years	____	3
Other(Specify) _____		4

19. If your school is not currently offering a unit or units in data processing incorporated in another business course, are you considering one?

YES	____	1
NO	____	2

20. If your school plans to offer a unit in data processing incorporated in another course, when?

Next year	____	1
Two years	____	2
3-5 years	____	3
Other (Specify) _____		4

21. If your school plans to offer a unit in data processing, in what courses will it be incorporated? Please specify.

_____

22. If your school is not planning to offer data processing either as a separate course or as a unit in other business courses, is it because of: (Check more than one if necessary.)

Lack of interest	___	1
Lack of concern by administration	___	2
Lack of trained teachers	___	3
Lack of available equipment	___	4
Lack of community need	___	5
Other (Specify)_____		6

23. I would like to see the results of this study.

YES	___	1
NO	___	2

Please return to: Charles Haycraft
420 East Vandalia
Edwardsville, Illinois 62025

APPENDIX E

Questionnaire Sent to Business Teachers

QUESTIONNAIRE ON TEACHER TRAINING FOR EACH TEACHER IN THE BUSINESS EDUCATION DEPARTMENT

To the Business Education Teacher:

Kindly complete the following questionnaire. All the information is confidential; no data will be reported individually.

1. Have you had formal training in data processing?

YES	___ 1
NO	___ 2

2. What was the nature of the preparation you received for teaching data processing?

Educated by business	___ 1
Self Educated	___ 2
Private business or technical school	___ 3
Junior College	___ 4
College Workshop	___ 5
University or College	___ 6
Other (Specify)_____	___ 7

3. If you have had college courses in data processing, approximately how many hours? (Check appropriate column only.)

	Quarter hours	Semester Hours
1 to 3 hours	___ 1	___ 1
4 to 6 hours	___ 2	___ 2
7 to 12 hours	___ 3	___ 3
13 to 15 hours	___ 4	___ 4
Other(specify)_____	___ 5	___ 5

4. Have you ever taught a separate course in data processing?

YES	___ 1
NO	___ 2

5. Have you ever taught a unit in data processing which was incorporated in another business course?

YES	___ 1
NO	___ 2

6. Have you ever attended SIU, Edwardsville, or SIU, Carbondale, for any of the following? (Check more than one if necessary.)

B.S. or B.A.	___ 1
M.S. or M.A.	___ 2
Ph. D.	___ 3
Post Graduate Courses	___ 4
Summer Workshops	___ 5
Courses in data processing	___ 6
Courses which included data processing	___ 7
Other (Specify)_____	8

APPENDIX F

List of Schools Participating in Study

ILLINOIS SCHOOLS PARTICIPATING IN THIS STUDY

Alexander County

Cairo High School, 2037 Washington Avenue, Cairo
Egyptian High School, R. R. 1, Tamms

Bond County

Bond County High School, Vandalia Road, Greenville
Mulberry Grove High School, Mulberry Grove

Calhoun County

Brussels High School, Brussels
Calhoun County High School, Hardin

Clay County

Flora High School, 600 South Locust Street, Flora

Clinton County

Aviston High School, First Street, Aviston
Breese High School, Main & Sixth Streets, Breese
Carlyle High School, R. R. 127 North, Carlyle
Trenton High School, 319 North Main Street, Trenton

Crawford County

Oblong High School, 700 South Range Street, Oblong
Robinson High School, Douglas Street, Robinson

Edwards County

Edwards County Community High School, Albion

Effingham County

Altamont High School, Altamont
Beecher City High School, Beecher City
Dietrich High School, Dietrich
Effingham High School, 1000 West Grove, Effingham
Teutopolis High School, Teutopolis

Fayette County

Brownstown High School, Brownstown

LaGrove High School, Farina
Ramsey High School, Ramsey
St. Elmo High School, St. Elmo
Vandalia High School, North Eighth Street, Vandalia

Franklin County

Benton High School, 609 East Main Street, Benton
Christopher High School, Christopher
Thompsonville High School, Thompsonville
Zeigler-Royalton High School, Zeigler

Gallatin County

North Gallatin High School, Ridgway
Southeast Gallatin, Shawneetown

Greene County

Dahlgren High School, Dahlgren
McLeansboro High School, 200 South Pearl Street, McLeansboro

Jackson County

Campbell Hill High School, Box 222, Willisville
Carbondale East High School, Carbondale
Carbondale Central High School, 200 N. Springer, Carbondale
Elkville High School, Elkville
Gorham High School, Gorham
Murphysboro High School, Ninth & Walnut Sts., Murphysboro

Jasper County

Newton High School, Newton

Jefferson County

Webber High School, Bluford
Mount Vernon High School, Seventh & Casey Avenues, Mount Vernon
Waltonville High School, Waltonville

Johnson County

Vienna High School, Vienna

Lawrence County

Bridgeport High School, 908 Church Street, Bridgeport
Lawrenceville High School, Eighth & Charles Sts., Lawrenceville
Sumner High School, West Locust Street, Sumner,

Macoupin County

Bunker Hill High School, Brookline Avenue, Bunker Hill
Carlinville High School, 829 West Main Street, Carlinville
Gillespie High School, 412 Oregon Street, Gillespie
Girard High School, Girard
Mount Olive High School, 804 West Main, Mt. Olive
Palmyra High School, Palmyra
Piasa High School, Piasa
Staunton High School, 701 North Deneen Street, Staunton
Virden High School, Virden

Madison County

Alton High School, 1211 Henry Street, Alton
Bethalto High School, East Central Street, Bethalto
Edwardsville High School, 708 St. Louis St., Edwardsville
Granite City High School, 2014 State Street, Granite City
Highland High School, 1800 Lindenthal Street, Highland
Livingston High School, Livingston
Madison High School, 1707 Fourth Street, Madison
Roxana High School, Chaffer & Thomas Streets, Roxana
Triad High School, R.R. 1, St. Jacob,
Venice High School, 700 Broadway, Venice
Wood River-East Alton High School, 777 Wood River, Ave., Wood River
Worden High School, Box 395, Worden

Marion County

Centralia High School, 1000 East Third Street, Centralia
Odin High School, Merritt Street, Odin
Patoka High School, Patoka
Salem High School, Rte. 37 North, Salem
Sandoval High School, Sandoval

Massac County

Brookport High School, Third & Crokett Streets, Brookport
Joppa High School, North Avenue, Joppa
Metropolis High School, 1004 Catherine Street, Metropolis

Monroe County

Columbia High School, 113 South Rapp Avenue, Columbia
Waterloo High School, Bellefontaine Drive, Waterloo

Montgomery County

Hillsboro High School, 522 East Tremont Street, Hillsboro
Nokomis High School, Box 71, Nokomis
Raymond High School, R.R. 2, Raymond, Ill.
Witt High School, Third & Park Streets, Witt

Perry County

DuQuoin High School, 120 East Spring Street, DuQuoin
Pinckneyville High School, 301 W. Mulberry Street, Pinckneyville
Tamaroa High School, Tamaroa

Pulaski County

Ullin High School, R.R. 1, Ullin
Mounds High School, 616 Walnut Street, Mounds

Randolph County

Chester High School, Chester
Coulterville High School, Coulterville

Richland County

West Richland High School, Noble
East Richland High School, 1200 East Laurel Street, Olney

St. Clair County

Belleville East High School, 2555 West Blvd., Belleville
Belleville West High School, 2600 West Main Street, Belleville
Cahokia High School, 1700 Jerome Lane, Cahokia
Brooklyn High School, Lovejoy
Dupo High School, 600 Louisa Avenue, Dupo
East St. Louis High School, 240 North Sixth St., East St. Louis
Freeburg High School, 11 South Alton Street, Freeburg
Marissa High School, Marissa
Mascoutah High School, Mascoutah
New Athens High School, Belsha & Hanft Sts., New Athens
O'Fallon High School, 600 South Smiley Avenue, O'Fallon

Saline County

Carrier-Mills-Stonefort High School, Carrier Mills
Eldorado High School, 1610 Locust Street, Eldorado
Galatia High School, Galatia
Harrisburg High School, 333 W. College, Harrisburg

Union County

Anna-Jonesboro High School, 608 South Main Street, Anna
Cobden High School, Cobden

Wabash County

Mount Carmel High School, Mount Carmel

Washington County

Ashley High School, Ashley
Nashville High School, 400 South Washington St., Nashville
Okawville High School, Okawville

Wayne County

Cisne High School, Cisne
Fairfield High School, 300 West King Street, Fairfield

White County

Carmi High School, 800 West Main Street, Carmi
Crossville High School, N. Cross Street, Crossville
Enfield High School, State Highway 45, Enfield
Grayville High School, 728 West North Street, Grayville
Mills Prairie High School, Mill Shoals
Norris City High School, Norris City

Williamson County

Carterville High School, 116 Main Street, Carterville
Crab Orchard High School, R.R. 2, Marion
Johnston City High School, 1500 Jefferson Street, Johnston City
Marion High School, 1410 West Hendrickson Street, Marion

Vita Sheet

Graduate School
Southern Illinois University

Name Charles L. Haycraft Date of Birth 6/23/39

Local Address 420 East Vandalia

Edwardsville, Illinois

Colleges or Universities Attended

Southern Illinois University, Carbondale
School of Business, B.S. in Economics